



UNITED STATES PATENT AND TRADEMARK OFFICE

Edh

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/773,667	02/02/2001	Daniel B. Kilfoyle	SAIC0031-US	7052
27510	7590	06/01/2005	EXAMINER	
KILPATRICK STOCKTON LLP			NG, CHRISTINE Y	
607 14TH STREET, N.W.			ART UNIT	
WASHINGTON, DC 20005			PAPER NUMBER	
			2663	
DATE MAILED: 06/01/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/773,667

Applicant(s)

KILFOYLE, DANIEL B.

Examiner

Christine Ng

Art Unit

2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-16, 18-23, 25-32, 34, 35 and 37-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-23, 25-32, 34, 35 and 37-40 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-16, 18, 19 and 41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/1/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites the limitation "the plurality of physical sectors" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 4, 8, 15 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,711,142 to Suzuki et al.

Referring to claim 1, Suzuki et al disclose in Figure 1 a wireless communication network for providing wireless communication to at least one user equipment (UE) comprising:

Art Unit: 2663

At least one network cell, wherein the at least one UE (terminal devices 4₁-4₄) is located. Refer to Column 4, lines 12-16 and lines 57-59; and Column 5, lines 9-12.

A base station (cellular base stations 2₁-2₁₆) located in the at least one network cell and associated with the network cell. Refer to Column 4, lines 17-22.

At least one remote emitter (high speed downlink base stations 3₁-3₄) remotely located in the at least one network cell. As shown in Figure 3 and 10A-10E, the service areas of cellular base stations 2₁-2₁₆ and high speed downlink base stations 3₁-3₄ can overlap. Refer to Column 4, lines 22-24 and Column 13, lines 5-8.

A communication link (cellular network 5) between the base station and the at least one remote emitter.

Wherein any uplink communication signal from the at least one UE is directly received and processed by the base station (cellular network 5 between cellular base stations 2₁-2₁₆ and terminal devices 4₁-4₄ is bidirectional), and at least one downlink communication signal (high speed transmission request signal) from the base station intended for the at least one UE is received, processed, and transmitted to the at least one UE by the at least one remote emitter. As shown in Figure 3 and 10A-10E, the cellular base stations 2₁-2₁₆ and high speed downlink base stations 3₁-3₄ can operate in the same cells. Refer to and Column 13, lines 5-8. When they do and uplink communication signal S42a is a high speed transmission request signal, the remote emitter (high speed downlink base stations 3₁-3₄) processes the signal. The processing results in performing "high speed downlink transmission from base station 3₁ to transfer

Art Unit: 2663

portion 43 via high speed downlink network 6". Refer to Column 8, line 60 to Column 10, line 35 and Figure 6.

Referring to claim 4, Suzuki et al disclose in Figure 1 that the at least one remote emitter (high speed downlink base stations 3₁-3₄) comprises a remote downlink transmitter (RDT) (physical medium 50₄) located at a site remote from the base station (cellular base stations 2₁-2₁₆) and contains no processing capability for the any uplink communication signal from the at least one UE (terminal devices 4₁-4₄) to the base station. The high speed downlink base stations 3₁-3₄ only operate in the downlink direction. Refer to Column 7, lines 21-29 and Column 10, lines 11-35.

Referring to claim 8, Suzuki et al disclose in Figure 1 that the communication link between the base station and the at least one remote emitter comprises a landline connected communication link. Cellular network 5 can be an "... ISDN or other cable network..." (Column 12, lines 61-62).

Referring to claim 15, Suzuki et al disclose in Figure 5 that the at least one remote emitter (high speed downlink base stations 3₁-3₄) processes the at least one downlink communication signal (S82a) by receiving the downlink signal from the base station (cellular base stations 2₁-2₁₆), performing physical layer (through physical medium control portion 51₂) processing (negotiating transmission time and modulation format) of the downlink signal, and transmitting the processed downlink signal. Refer to Column 9, lines 22-27 and Column 10, lines 11-35.

Referring to claim 16, Suzuki et al disclose in Figure 1 that the physical processing of the downlink signal comprises increasing a data rate of the downlink

Art Unit: 2663

signal. The high speed downlink base stations 3₁-3₄ operate in the high speed downlink network 6 at a higher bit rate than that of the cellular network 5, since the "amount of data from the server device to the terminal device is normally very large compared with that of a signal transmitted from the terminal device to the server device". Refer to Column 1, lines 30-42 and Column 5, lines 3-6. The physical medium control portion 51₄ of the high speed downlink base station 3₁ negotiates modulation format to fulfill a predetermined bit rate. Refer to Column 10, lines 11-26.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,711,142 to Suzuki et al in view of U.S. Patent No. 6,310,856 to Taipale.

Referring to claim 2, Suzuki et al do not disclose that the network is a spread-spectrum based, code division multiple access (CDMA) type network.

Taipale discloses that CDMA offers the advantage of efficient use of the available frequency spectrum since multiple channels each corresponding to a different user occupy the same frequency band. Refer to Column 1, lines 13-27. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the network is a spread-spectrum based, code division multiple access

Art Unit: 2663

(CDMA) type network; the motivation being that CDMA allows several signal to occupy the same channel which optimizes the use of the available bandwidth.

Referring to claim 3, Suzuki et al do not disclose that the network is a spread-spectrum based, wide band CDMA network.

Taipale discloses that WCDMA is a version of CDMA. Refer to Column 1, lines 13-21. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the network is a spread-spectrum based, wide band CDMA network, the motivation being that WCDMA delivers data at a much faster rate than CDMA and also supports voice, data, images and video.

7. Claims 6, 12-14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,711,142 to Suzuki et al in view of U.S. Publication No. 2002/0115448 to Amerga et al.

Referring to claim 6, Suzuki et al do not disclose that the at least one network cell comprises a plurality of network cells; and the base station directly receives an uplink communication signal from a UE located in a network cell other than the cell to which the base station is associated.

Amerga et al disclose that a base station may receive an uplink communication signal from a mobile terminal that is not located within its cell. Remote terminals are dispersed throughout the network and "may communicate with one or more cells on the forward and reverse links at any moment, depending on whether the remote terminal is in soft handoff". Refer to Section 0034. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the at least

Art Unit: 2663

one network cell comprises a plurality of network cells; and the base station directly receives an uplink communication signal from a UE located in a network cell other than the cell to which the base station is associated; the motivation being to facilitate a soft handoff condition when a mobile station may be communicating with both a serving and a target base station.

Referring to claim 12, Suzuki et al do not disclose that the at least one network cell is divided into a plurality of sectors for signal reception and signal processing by the base station, and the at least one remote emitter comprises at least one remote emitter assigned to each of the plurality of physical sectors.

Amerga et al disclose in Figure 1 that a network cell (cell 1) is divided into a plurality of sectors (102a,112a) for signal reception and signal processing by the base station (BS 104a), and a remote emitter (repeater 114a) is assigned to one of the physical sectors (112a). Refer to Section 0032-0033. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the at least one network cell is divided into a plurality of sectors for signal reception and signal processing by the base station, and the at least one remote emitter comprises at least one remote emitter assigned to each of the plurality of physical sectors; the motivation being so that repeaters can provide coverage for regions within the cell that would not otherwise be covered due to fading conditions or to extend the coverage of a network that are outside the coverage area of the base station. Refer to Sections 0006 and 0033.

Referring to claim 13, Suzuki et al do not disclose that the divided plurality of

Art Unit: 2663

sectors of the at least one network cell comprise physical sectors of the base station.

Amerga et al disclose in Figure 1 that the divided plurality of sectors (102a, 112a) of the network cell (cell 1) comprise physical sectors of the base station (BS 104a). Refer to Section 0032-0033. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the divided plurality of sectors of the at least one network cell comprise physical sectors of the base station; the motivation being to divide the cell into physical sectors that cannot be covered due to fading conditions or are outside the range of the base station, so that these areas can be covered by repeaters. Refer to Sections 0006 and 0033.

Referring to claim 14, Suzuki et al do not disclose that the at least one remote emitter forms a part of a logical sector of the base station.

Amerga et al disclose in Figure 1 that the remote emitter (repeater 114a) forms a logical sector of the base station (BS 104a) since it is an additional sector in cell 1 that covers regions that out of the range of the base station. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the at least one remote emitter forms a part of a logical sector of the base station; the motivation being to divide the cell into sectors that cannot be covered due to fading conditions or are outside the range of the base station, so that these areas can be covered by repeaters. Refer to Sections 0006 and 0033.

Referring to claim 19, Suzuki et al do not disclose that the logical sector emits common channeling signals identical to those emitted by the plurality of physical sectors.

Amerga et al disclose in Figure 1 that the remote emitter (repeater 114a) of the logical sector (112a) performs the same operation as the base station (104a) of the physical sectors (102a). Repeaters are bidirectional in their coverage area and function to retransmit signals from the base station to the terminal on the forward link and retransmit signals from the terminal to the base station on the reverse link. Refer to Sections 0006-0007 and 0032-0033. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the logical sector emits common channeling signals identical to those emitted by the plurality of physical sectors; the motivation being that repeaters must perform the same operation as base stations to retransmit signals to and from the terminals within its coverage area that are out of the range of the base station.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,711,142 to Suzuki et al in view of U.S. Patent No. 6,137,784 to Wallerius et al.

Suzuki et al does not disclose that the communication link between the base station and the at least one remote emitter comprises an out-of-band radio frequency (RF) communication link.

Wallerius et al disclose in Figure 1 a mobile communication system wherein the communication link between zone managers 20, which can be located at a base station, and collectors 45 are RF transmission links using either in-band or out-of-band RF transmission signals. Refer to Column 6, lines 49-65; Column 9, lines 42-46; and Column 31, lines 48-50. Therefore, it would have been obvious to one of ordinary skill

Art Unit: 2663

in the art at the time the invention was made to include that the communication link comprises an out-of-band radio frequency (RF) communication link; the motivation being so that signaling can be done on a channel dedicated to signaling and independent from the data carrying channels, thereby allowing both signaling and data channels to utilize their full bandwidth capacity and allowing for faster call setup.

9. Claims 9-11 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,711,142 to Suzuki et al.

Referring to claims 9 and 10, Suzuki et al do not disclose that the communication link between the base station and the at least one remote emitter comprises an Internet Protocol (IP) network, wherein the IP network is the Internet.

However, Suzuki et al disclose that the cellular network 5 can be "an ISDN or other cable network or a satellite telephone line network or other bidirectional communication network..." (Column 12, lines 62-64). Suzuki et al also disclose that in a communication system using Internet, a communication link established by an ISDN network can be used for transmitting information between a server and a user. Refer to Column 1, lines 20-29. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the communication link comprises an internet protocol (IP) network, wherein the IP network is the Internet; the motivation being that the Internet allows users "...to obtain a variety of content data in accordance with need at a necessary time and at a necessary place" (Column 1, lines 17-19).

Referring to claim 11, Suzuki et al do not specifically disclose that the IP network

Art Unit: 2663

is a dedicated private data network for the communication link between the base station and the at least one remote emitter.

However, Suzuki et al show in Figure 1 that a cellular network 5 connects the automobile cellular switching center 7 and the high speed downlink switching center 8, which indirectly also connects cellular base stations 2₁-2₁₆ to the high speed downlink base stations 3₁-3₄. Cellular network 5 is a data network that supports bidirectional communication between communication nodes and call control for assigning a channel. Refer to Column 4, lines 17-24 and lines 28-59. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the IP network is a dedicated private data network for the communication link between the base station and the at least one remote emitter; the motivation being to provide a data network between the base station and the remote emitter to transmit data and control packets for coordinating information transmission to the mobile stations.

Referring to claim 41, refer to the rejection of claims 1 and 9-11.

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,711,142 to Suzuki et al in view of U.S. Patent No. 6,625,198 to Tiedemann et al.

Referring to claim 18, Suzuki et al do not disclose that the at least one remote emitter processes the at least one downlink communication signal by coding, interleaving, spreading, and scrambling the at least one downlink signal.

Tiedemann et al disclose in Figure 2 a base station 104 that processes a downlink communication signal by coding, interleaving, spreading and scrambling the

Art Unit: 2663

downlink signal. Refer to Column 5, lines 21-37. Although base station 104 is not a repeater, repeaters must retransmit signals from the base station to the mobile terminal when the mobile terminal is outside the range of the base station, so it must perform the same function as the base station. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the at least one remote emitter processes the at least one downlink communication signal by coding, interleaving, spreading, and scrambling the at least one downlink signal; the motivation being so that the repeater can perform the same operation on the data as the base station, thereby allowing the mobile terminal to receive the signal as if it was transmitted directly from the base station.

Allowable Subject Matter

11. Claims 20-23, 25-32, 34, 35 and 37-40 are allowed.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any


Art Unit: 2663


extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng 
May 26, 2005


RICKY NGO
PRIMARY EXAMINER
5/31/05